

Claims

1. A loader linkage comprising:
 - a loader frame;
 - a boom having a loader end and an attachment end, a middle portion being located between the loader and attachment ends, the loader end of the boom being pivotally coupled to the loader frame by a boom pivot;
 - an attachment is pivotally coupled to the attachment end of the boom and having an angular position relative to the boom;
 - an attachment tilt linkage controls the angular position of the attachment relative to the boom, the attachment tilt linkage comprises a leveling link having a first end that is pivotally coupled to the loader frame by a leveling link pivot and a second end, a bell crank having a drive end and a driven end, the bell crank is pivotally coupled to the second end of the leveling link by a bell crank pivot located between the drive end and the driven end, a linear actuator extends between the loader frame and the driven end of the bell crank for pivoting the bell crank about the bell crank pivot, an attachment link is pivotally coupled to the drive end of the bell crank and extends to the attachment for controlling the angular position of the attachment relative to the boom.
2. The loader linkage as defined by claim 1 further comprising a guide link that extends between the middle portion of the boom and the attachment link.
3. The loader linkage as defined by claim 2 wherein the boom comprises right and left arms that are coupled to one another by a transverse cross tube, the transverse guide tube being provided with a support to which the guide link is pivotally attached to the boom.
4. The loader linkage as defined by claim 3 wherein the leveling link pivot is located above and behind the boom loader pivot.
5. The loader linkage as defined by claim 4 wherein the tilt cylinder loader pivot is located below and behind the boom pivot.
6. The loader linkage as defined by claim 3 wherein the tilt cylinder loader pivot is located below and behind the boom pivot.
7. The loader linkage as defined by claim 1 wherein the leveling link pivot is

located above and behind the boom loader pivot.

8. The loader linkage as defined by claim 7 wherein the tilt cylinder loader pivot is located below and behind the boom pivot.

9. The loader linkage as defined by claim 1 wherein the tilt cylinder loader pivot is located below and behind the boom pivot.

10. A work vehicle for performing a work operation, the work vehicle comprising:
a frame;

ground engaging means for supporting and propelling the frame;

a mast extending upwardly from the frame;

a boom having a loader end and an attachment end, a middle portion being located between the loader and attachment ends, the loader end of the boom being pivotally coupled to the loader frame by a boom pivot;

an attachment is pivotally coupled to the attachment end of the boom and having an angular position relative to the boom;

an attachment tilt linkage controls the angular position of the attachment relative to the boom, the attachment tilt linkage comprises a leveling link having a first end that is pivotally coupled to the mast by a leveling link pivot and a second end, a bell crank having a drive end and a driven end, the bell crank is pivotally coupled to the second end of the leveling link by a bell crank pivot located between the drive end and the driven end, a linear actuator extends between the mast and the driven end of the bell crank for pivoting the bell crank about the bell crank pivot, an attachment link is pivotally coupled to the drive end of the bell crank and extends to the attachment for controlling the angular position of the attachment relative to the boom.

11. The work vehicle as defined by claim 10 further comprising a guide link that extends between the middle portion of the boom and the attachment link.

12. The work vehicle as defined by claim 11 wherein the boom comprises right and left arms that are coupled to one another by a transverse cross tube, the transverse guide tube being provided with a support to which the guide link is pivotally attached to the boom.

13. The work vehicle as defined by claim 12 wherein the leveling link pivot is

located above and behind the boom loader pivot.

14. The work vehicle as defined by claim 13 wherein the tilt cylinder loader pivot is located below and behind the boom pivot.

15. The work vehicle as defined by claim 14 wherein the tilt cylinder loader pivot is located below and behind the boom pivot.

16. A loader linkage comprising:

- a loader frame;

- a boom having a loader end and an attachment end, a middle portion being located between the loader and attachment ends, the loader end of the boom being pivotally coupled to the loader frame by a boom pivot;

- an attachment is pivotally coupled to the attachment end of the boom and having an angular position relative to the boom;

- an attachment tilt linkage controls the angular position of the attachment relative to the boom, the attachment tilt linkage comprises a floating bell crank that is pivotally coupled to the loader frame independent of the boom, the floating bell crank having drive end and a driven end, a linear actuator extends between the loader frame and the driven end of the floating bell crank for pivoting the floating bell crank, an attachment link is pivotally coupled to the drive end of the floating bell crank and extends to the attachment for controlling the angular position of the attachment relative to the boom.

17. The loader linkage as defined by claim 16 further comprising a guide link that extends between the middle portion of the boom and the attachment link.

18. The loader linkage as defined by claim 17 wherein the guide link comprises a single Y-link.

19. A work vehicle for performing a work operation, the work vehicle comprising:

- a frame:

- ground engaging means for supporting and propelling the frame;

- a mast extending upwardly from the frame;

- a boom having a loader end and an attachment end, a middle portion being located between the loader and attachment ends, the loader end of the boom being pivotally coupled to the loader frame by a boom pivot;

an attachment is pivotally coupled to the attachment end of the boom and having an angular position relative to the boom;

an attachment tilt linkage controls the angular position of the attachment relative to the boom, the attachment tilt linkage comprises a floating bell crank that is pivotally coupled to the loader frame independent of the boom, the floating bell crank having a drive end and a driven end, a linear actuator extends between the loader frame and the driven end of the floating bell crank for pivoting the floating bell crank, an attachment link is pivotally coupled to the drive end of the floating bell crank and extends to the attachment for controlling the angular position of the attachment relative to the boom.

20. The work vehicle as defined by claim 19 further comprising a guide link that extends between the middle portion of the boom and the attachment link.

21. The work vehicle as defined by claim 20 wherein the guide link comprises a single Y-link.